YASKAWA

MOTOMAN ROBOTICS

ADVANCED PATH AND PROCESS CONTROL
FOR UP TO 8 ROBOTS OR 72 AXES

DX200

DYNAMIC ENERGY-EFFICIENT MULTIPLE ROBOT CONTROLLER

KEY FEATURES

Patented multiple robot control; up to 8 robots/72 axes with coordinated motion between devices

- Application flexibility
- Higher productivity
- Lower integration costs

Integrated cell (system-level) control capabilities

High reliability and energy efficiency

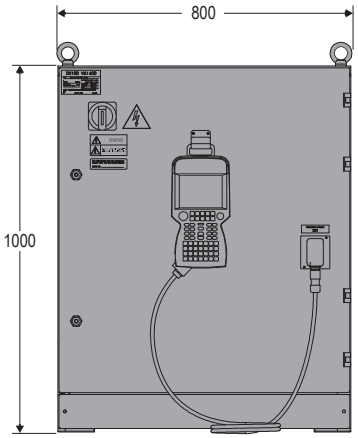
Easy maintenance with reducer status check function, hardware life diagnostic function, enhanced troubleshooting and alarm recovery, and improved Mean Time To Repair (MTTR)

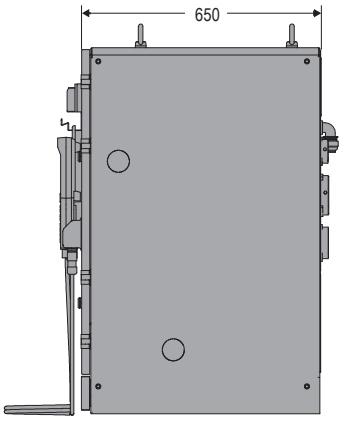
Powerful programming with minimum keystrokes

Convenient compact flash slot and USB port facilitate memory backups

- Features robust PC architecture, providing system-level control for robotic workcells.
  - Built-in ladder logic processing; 4,096 I/O addresses
  - Variety of fieldbus network connections
  - High-speed E-server connection
  - I/F panels (10) shows HMI on pendant
- Often eliminates need for separate PLC and human machine interface (HMI). Delivers significant cost savings at system level, while decreasing workcell complexity and improving overall reliability.
- Patented multiple robot control, as well as I/O devices and communication protocols. Dynamic interference zones protect robot arm and provide advanced collision avoidance.
- Advanced Robot Motion (ARM) control provides high performance, best-in-class path planning and dramatically reduces teaching time. Supports coordinated motion for multiple robots and auxiliary/external axes.
- Small, lightweight Windows® CE programming pendant features color touch screen with multiple window display capability. Programming features are designed to use minimum number of keystrokes.
- Conserves power consumption from 38% - 70% depending on application and robot size.
- Compliant to ANSI/RIA R15.06-2012 and other relevant ISO and CSA safety standards.
- Available with Category 3 Performance Level d (PLd) Functional Safety Unit (FSU).
  - Multiple zones with inside and outside position monitoring
  - Speed limiting and stand-still monitoring
  - Multiple tool interference and angle checking
- DX200 control cabinet allows for up to three auxiliary/external axes and can be remote-mounted. Top- or side-mount expansion options available.

DX200 CONTROLLER





All dimensions are metric (mm) and for reference only. Please request detailed drawings for all design/engineering requirements.

STANDARD I/O - NPN

Forty optically isolated inputs, 32 transistor outputs, 8 relay contact outputs (configured to optimize each application), and four break-out cards are provided as standard. PNP I/O available.

I/O EXPANSION - DX200

The DX200 supports I/O expansion via:

- EtherNet/IP
- DeviceNet
- Profibus-DP
- Mechatrolink II
- CC-Link
- Remote I/O
- Discrete I/O
- Analog I/O
- Other networks available

CONTROLLER	
Dimensions	DX200: 800 (w) x 1000 (h) x 650 (d) (31.5" x 39.4" x 25.6")
Approximate Mass	150-250 kg (330.8-551.3 lbs.)
Ambient Temperature [°C]	-0° to 45° C (32° to 113° F) (operation)
Humidity [%]	90% max. non-condensing
Primary Power Requirements	3-phase, 240/480/575 VAC at 50/60 Hz
Digital I/O **NPN - Standard** **PNP - Optional**	4,096 inputs and 4,096 outputs Standard I/O: 40 inputs / 40 outputs consisting of 24 user inputs / 24 user outputs 32 Transistor Outputs; 8 Relay Outputs Max. I/O (optional)
Position Feedback	Absolute encoder
Program Memory	JOB: 200,000 steps, 10,000 instructions CIO Ladder Standard: 20,000 steps
Interface	Ethernet (10 BASE-T / 100 BASE-TX)
Multiple Robot Control	Ability to control up to 8 robots / 72 axes
Protection Rating	IP54
SAFETY FEATURES	
Safety Specs (Category 4 PLe)	Controller Safety-Rated Emergency Stop & Safety Gate inputs. Programming Pendant includes: Safety-Rated Emergency Stop Pushbutton, 3-Position Enable Switch with key-lock and Manual Brake Release built into programming pendant. Meets ANSI/RIA R15.06-2012 and CSA Z434-03
Standard Software Features	Arm interference, collision detection, machine lock, and safety interlock
Functional Safety Unit (Category 3 PLd SIL2)	Position monitoring (32 zones), speed limiting, tool monitoring, graphic pendant set-up.
PENDANT	
Pendant Dimensions	169 (w) x 314.5 (h) x 50 (d) (6.6" x 12.4" x 2")
Pendant Display	5.7-inch full-color touch screen, 640 x 480 (VGA)
Pendant Languages	English, German, Japanese, Spanish, Chinese
Pendant Weight	.998 kg (2.2 lbs)
Coordinate System	Joint, rectangular, cylindrical, tool, 63 user-coordinate frames
Windows® Menu-Driven Interface	User-selectable touch-screen menu, multiple windows supported one Compact Flash slot; one USB port (1.1)
Pendant O/S	Windows® CE
Protection Rating	IP65
PROGRAMMING	
Programming Language	INFORM III, menu-driven programming
Robot Motion Control	Joint motion, linear, circular, spline interpolation
Multiple Device Control	Parallel Start, Twin Synchronous, Multiple Group Combinations, Station Coordinated Moves (positioners), Bases (tracks and gantries)
Programmable Logic Control	Ladder monitor, ladder programming, I/F pendant display, address naming, expanded logic operands
Device Instructions	Application specific (arc and spot welding, handling, general purpose)
I/O Instructions	Discrete I/O, 4-bit and 8-bit manipulation, analog output, analog input, analog scaling, sloping
MAINTENANCE	
Maintenance Functions	System monitor, internal maintenance clocks
Self-Diagnostics	Classifies errors and major/minor alarms and displays data; monitors reducers for predictive wear; alerts when major power components reach design life
User Alarm Display	Displays alarm messages for peripheral devices
Alarm Display	Alarm messages, alarm history provides instruction of how to repair fault
I/O Diagnosis	Permits simulated enabled/disabled input/output

YASKAWA
MOTOMAN ROBOTICS

motoman.com

Yaskawa America, Inc. | Motoman Robotics Division
100 Automation Way | Miamisburg, OH 45342
Tel: 937.847.6200 | Fax: 937.847.6277